

## **Attachment A**

### **Required Format for Iowa Highway Research Board (IHRB) Proposals** ***(Format Recommended for Problem Statements but not required)***

The following instructions are intended to help researchers prepare a proposal that will be acceptable for review by the IHRB. Proposals **must** comply with these requirements to be considered by the IHRB.

The research proposal should be prepared in a manner that defines the research problem and objectives, provides a detailed work plan for achieving the objectives, and indicates how the research findings are expected to be used. Proposals should provide a straightforward description of the researcher's ability to meet the stated objectives.

A technical advisory committee (TAC) will be assembled by the project Principal Investigator (PI) and the Iowa DOT research Staff prior to the start of each project. The project TAC will meet with the project PI(s) quarterly, or at an appropriate interval determined by the TAC at the start of the project, to review the project progress and to guide the research as necessary.

### **Title Page**

The proposal cover should include the following information:

- Proposal title (from RFP)
- Research proposal number (from RFP);
- "Submitted by" name, institution, address, e-mail address, and phone and facsimile numbers of proposer
- "Submitted to Operations Research Engineer, Iowa Department of Transportation, Office of Research and Analytics, 800 Lincoln Way, Ames, Iowa 50010"
- Proposal date

### **Table of Contents**

On a separate page, list the proposal's sections and page numbers.

## **Problem Statement**

Concisely express your understanding of the problem presented in the RFP. Do not simply repeat the wording of the RFP, but rather demonstrate your own insight into the problem.

## **Background Summary**

Include background information on the research topic. Summarize the findings of a preliminary literature search and state the relationship of the proposed study to prior research or other studies. The summary should reveal your understanding of underlying principles and should clearly express your appreciation of the problem.

The importance of the background summary should not be underestimated. A comprehensive summary ensures that all aspects of the research topic have been adequately considered so new research can build upon prior work rather than duplicate it.

## **Objectives**

State the study's technical objectives as it is cited in the RFP. Describe how each objective will be accomplished in the course of the research. Any deviations from the objectives listed in the RFP must be explained and justified.

## **Research Plan**

Describe how the objectives will be achieved through a logical and innovative plan. State each task as it relates to the Request for Proposal. Describe in appropriate detail how each task will be performed, and how each task contributes to accomplishing the study's stated objectives. Any deviations from the tasks, if listed, in the RFP must be explained and justified.

The plan should also describe the technical basis of the research. Describe the following, as appropriate:

- Principles or theories to be used
- Significant variables to be tested
- Analytical and statistical procedures
- Experimental and testing procedures
- Evaluation criteria
- Inspection and survey methods
- Controls to be used
- Material or procedure development

The plan should be complete, providing the greatest level of detail that the researcher's understanding of the problem permits.

Describe the facilities available to accomplish the research. Indicate equipment necessary to completion of the research and specify any restrictions on its use. Specify any equipment that is necessary but not currently on hand. If additional equipment is to be purchased with project funds, identify it in the budget estimate.

### **Products**

List the products that will be delivered during the research project. Deliverables might include:

- Reports
- Computer programs
- Manuals
- Physical models
- Photographs
- Data bases
- Video or other audio/visual materials

Unless directed otherwise in the RFP, always include the following items as products:

- Quarterly progress reports to the TAC
- Draft final report
- Final report
- Executive summary/Technology Transfer Document

Electronic copies (PDF or Microsoft Word format) of the final report are required unless permission is specifically granted otherwise.

### **Implementation/Technology Transfer**

Describe how (in general) Iowa cities, counties, or the Iowa DOT can apply the anticipated research results to improve their practice.

- Describe the form in which the research findings may be reported, such as a mathematical model, a laboratory test procedure, or a design technique. Describe these results in terms of the practicing engineer or administrator.
- State who would logically be responsible for applying the research results, such as the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration

(FHWA), Iowa cities and counties, or the Iowa DOT and particular offices within Iowa DOT.

- Identify specific standards or practices that might be affected by the research findings, such as AASHTO or Iowa DOT specifications, policies and procedures, legislation, and funding or staffing requirements.
- Identify institutional issues, including resource requirements, administrative rules, or laws, that might need to be addressed for successful implementation.

If findings will not be suitable for immediate application at the conclusion of the research project, indicate what further work might be necessary.

The PI, under the guidance of the TAC, will ensure that the final report has an implementation section that specifically meets the above requirements.

### **Benefits**

Identify potential benefits expected from the research. Describe how the research results can be used, and by whom, to improve transportation practice. Possible benefits include:

- Cost savings
- Increased safety
- Improved service
- Improved procedures

To the extent possible, describe how these benefits can be measured and their how their value can be determined after the study results are put into practice.

### **Time Schedule**

Provide a bar chart or other graphical presentation illustrating the scheduling of the major research tasks (Table 1). Indicate the number of months allocated to each task. Always allow twenty (20) days for Iowa DOT review of draft reports. Draft reports need to be approved by the TAC. Final, TAC approved final reports will be submitted to the IHRB for approval.

Table 1

Task	Month	1	2	3	4	5	6	7	8	9	10	11
1 Field Surveys												
2 Literature Review												
3 Field Tests												
4 Observe Construction												
5 Cost Analysis												
6 Develop Recommendations												



The amount indicated as “Estimated Funding” on the RFP represents what Iowa Highway Research Board feels the research topic merits and what level of funding should be necessary to complete the work. Proposers should set the scope and depth of study accordingly.

Proposals responding to the RFP should respond to the identified budget and project goals. Additional project tasks, beyond those outlined in the solicitation, may be identified by the principal investigator if deemed useful in improving the general objective of the project. All additional tasks and budget items associated with them will be clearly identified in the proposal as extra work and will be shown separate from the project tasks and budget items associated with the solicitation’s objectives. Because of budget constraints, additional funding may not be available. No budget extensions should be anticipated.